



US Army Corps
of Engineers

Upper Mississippi River - Illinois Waterway System Navigation Study

UMR-IWW System Navigation Study Newsletter

October 1995

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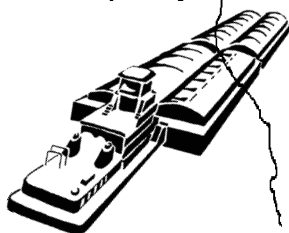


Minnesota
Iowa



Wisconsin
Illinois

Missouri



OPEN HOUSES TO BE HELD NOVEMBER 30 TO DECEMBER 7, 1995

The Upper Mississippi River - Illinois Waterway System Navigation Study team will hold a series of open houses at five locations throughout the study area.

PURPOSE OF THE OPEN HOUSES

The Corps of Engineers is at a point in the plan formulation process where input is needed from the public on the measures identified to reduce system traffic congestion.

The open houses are designed to inform the public of the progress on the study regarding the measures, both small- and large-scale, and to give the public an opportunity to discuss, comment, and provide additional information on the measures.

Corps of Engineers representatives from the Engineering, Economics, Environmental, Public Involvement, and Study Management Work Groups will be on hand to provide information and answer questions about the Navigation Study. ○

AUDIENCE

The open houses are for all people interested in the Upper Mississippi River - Illinois Waterway System Navigation Study. The general public and individuals from local, State, and Federal agencies are encouraged to attend. ○

OPEN HOUSE FORMAT

The format for the open houses will be the same at each location. Participants are invited to first view a brief slide show that will explain the open house format. The slides will run continuously so participants can attend at a time most convenient to them. Participants are also invited to view displays on various aspects of the Navigation Study (see page 2 for an explanation of the displays), and talk directly with study team representatives. No formal presentations will be made. ○

WHAT'S INSIDE

Purpose of the Open Houses	1
Audience	1
Open House Format	1
Previous Public Involvement Activities	2
Open House Displays	2
Open House Locations	3
Plan Formulation Process	3

Open House Location Map	4-5
Small Scale Measures	7
Interim Report Available	9
Large Scale Measures	9
Upcoming Meetings	11
Help Us Keep Our Mailing List	
Correct	11
Future Newsletters	12
Questions?	12

PREVIOUS PUBLIC INVOLVEMENT ACTIVITIES

Many public involvement activities have taken place within the study.

This series of open houses is the third public involvement activity in which Corps of Engineers representatives have met directly with the public to discuss the Navigation Study. Ongoing public involvement takes place through the: Governors' Liaison Committee, Economics Coordination Committee, Engineering Coordinating Committee, Navigation Environmental Coordination Committee, the Public Involvement Coordination Committee, and newsletters. These committee meetings are open to the public.

Fourteen informational public meetings were held along the Upper Mississippi River and Illinois Waterway in October and November of 1993. Those meetings were designed to provide information to those who were unfamiliar with or who had little knowledge of the Upper Mississippi River - Illinois Waterway System Navigation Study. We learned through these meetings that you, the public, desired much more information about the study more frequently. From this input, additional meetings were added to the study.

In November 1994, eight public meetings were held throughout the study area. The purpose of those meetings was to provide information on the study plan, the status of all efforts, and to solicit the public's input in identifying problems, opportunities, and issues relating to the Upper Mississippi River - Illinois Waterway System Navigation Study. The meetings were also designed as a component of the National Environmental Policy Act (NEPA) scoping process. ○

OPEN HOUSE DISPLAYS

Displays will be provided at the open houses to describe the progress that the Economics, Engineering, and Environmental Work Groups have made to date. In addition, videos will be shown and handouts provided to complement the displays. A brief description of the displays follows:

A timeline displaying the Upper Mississippi River - Illinois Waterway System Navigation Study plan formulation process will be shown. The display will show how the work groups interact with one another during the study's plan formulation process.

The economics display will show information on various studies, including transportation cost analysis, traffic forecasting, seasonality of shipments, and alternative transportation modes, and how the data will be used to support the selection of the National Economic Development (NED) Plan.

The engineering display will show the small- and large-scale measures which are being considered further in regards to reducing traffic congestion, information on innovative lock design, and results of the analysis of future operation and maintenance needs of the system.

The environmental display will show information on the Habitat Evaluation Procedure (HEP) as it relates to small- and large-scale measures. Also, ongoing studies of physical effects of traffic, the biological response to those effects, and how that information relates to the plan formulation process and ultimately to an Environmental Impact Statement, will be displayed in the environmental area.

A Historic Properties display will include information on known National Register of Historic Places properties, system archeological resources of concern, and ongoing impact assessment efforts.

Study team members will be available to discuss the displays and answer questions. ○

OPEN HOUSE LOCATIONS AND DIRECTIONS

An open house will be held in each of the five states within the study area. The open houses will be held from 1 p.m. to 4 p.m. and 6 p.m. to 9 p.m. at the following locations:

November 30 - Bloomington, MN

Radisson Hotel South
Atrium
7800 Normandale Boulevard

Directions: Take I-494 to Bush Lake Road exit. The hotel is located just north of I-494 and is visible from the interstate.

December 4 - Prairie du Chien, WI

Huckleberry's
Banquet Room
1916 Marquette Road South

Directions: Located on the south end of Prairie du Chien on Highways 35/18, across from Riverside Square Shopping Center, and next to the Super 8 Motel.

December 5 - Bettendorf, IA

Jumer's Castle Lodge
Mozart I & II
900 Spruce Hills Drive

Directions: Take the Spruce Hills exit off I-74 (exit No. 2) and go east 1/4 mile to the intersection with Utica Ridge Road. Go north (left) one block to the hotel parking lot entrance.

December 6 - Peoria, IL

Holiday Inn City Centre
Salons A & B
500 Hamilton Boulevard

Directions: Take I-74 to exit 93, Jefferson Street. Go two blocks to Hamilton Street, turn right, and go one block.

December 7 - St. Louis, MO

Embassy Suites Hotel-Downtown
Ballroom
901 First Street

The Embassy Suites Hotel is in the historic Laclede's Landing area of downtown St. Louis (north of the Arch).

Directions: Travel to the street on the north end of the Arch, Washington. When on Washington, turn left (north) on 1st Street (away from the Arch). Go four short blocks and the Embassy Suites is on the left. ○

PLAN FORMULATION PROCESS

The Corps of Engineers uses a six step process, called the plan formulation process, to determine if there is a worthwhile, feasible, plan of improvements (project) to recommend to Congress for action. The six steps are:

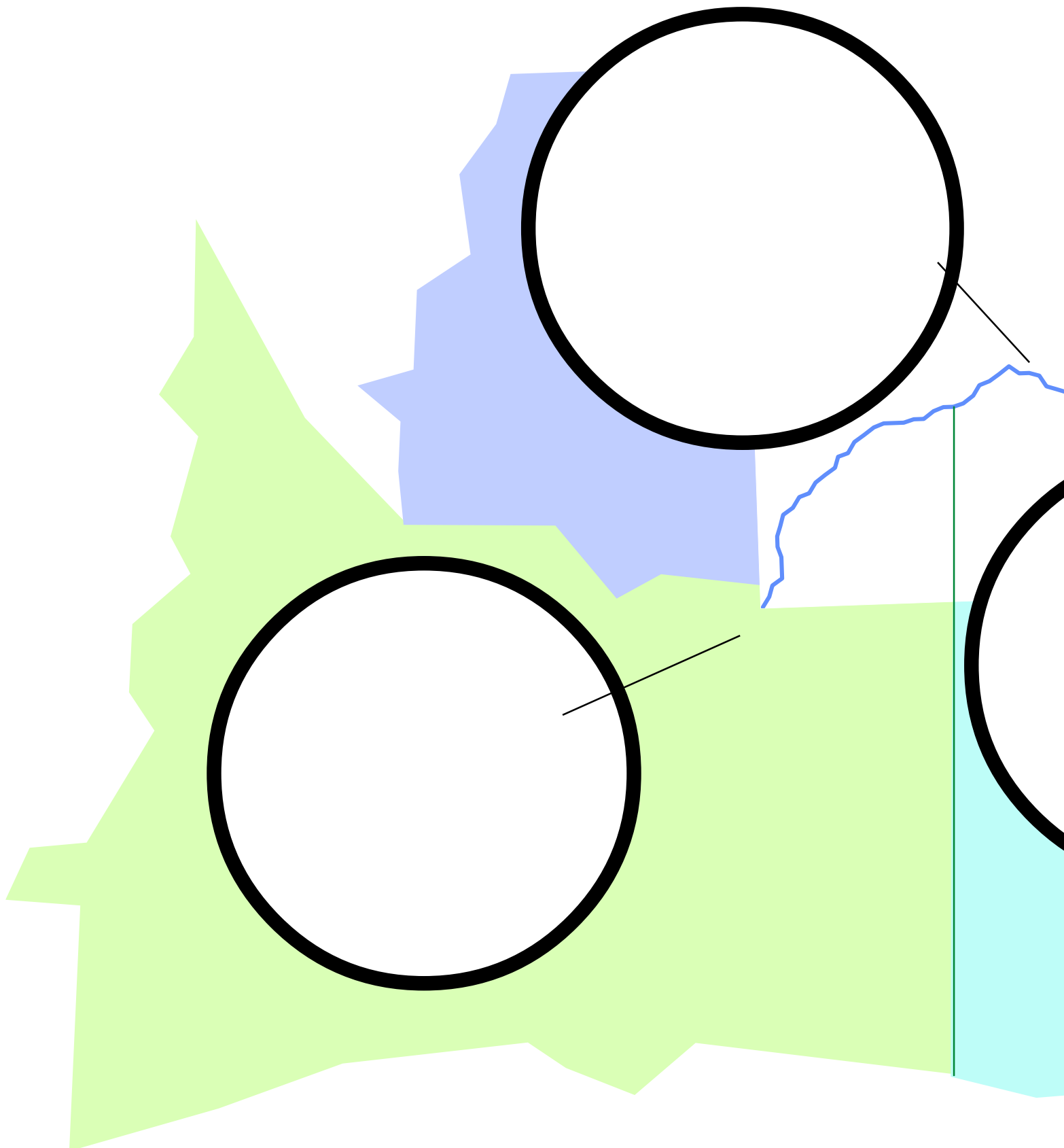
- Specify problems and opportunities.
- Inventory, forecast, and analyze conditions.
- Formulate alternative plans to resolve the identified problems and opportunities.
- Evaluate the economic, environmental, and other effects, both beneficial and adverse.
- Compare alternative plans and their effects.
- Select a recommended plan based upon the comparison of plans.

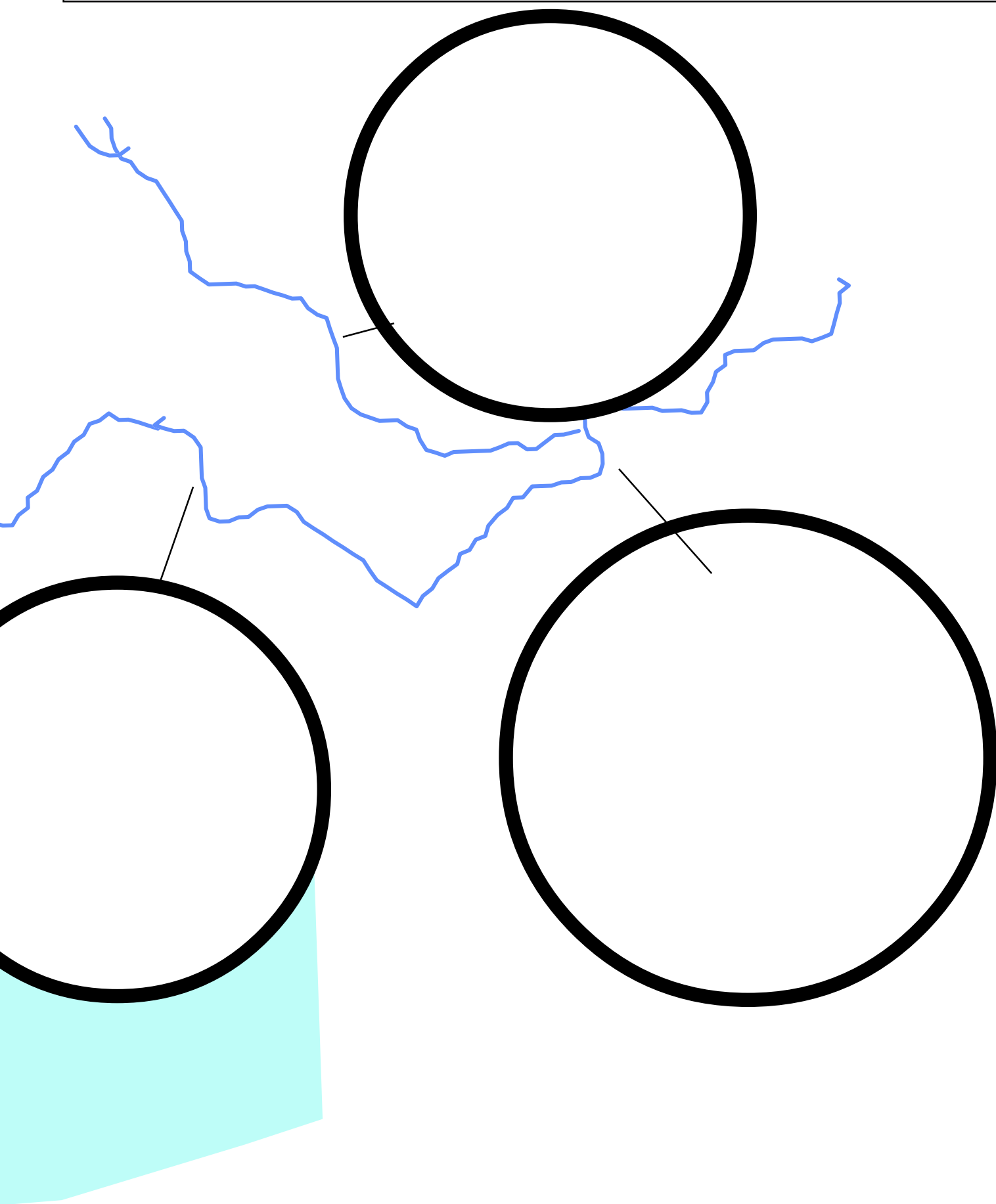
What do the above steps mean and why are they important? Although the Corps of Engineers regulations requires us to use and follow the six steps, this planning process is recognized as a correct and logical way to perform plan formulation, to determine whether any plans are worthwhile, and which is the best plan.

- Specify problems and opportunities.

Problem(s) must be identified before solutions are considered and developed. The question, "Are there opportunities or other possibilities which should be considered in looking at solutions?"

Open House Location Maps





needs to be asked. The identification of problems allows the development of specific planning goals and objectives for problem solving, reducing impacts, or making improvements.

The chief problem being addressed is delays to commercial navigation traffic. Posed as a question, is there a way, and what is the best way, to reduce delays to navigation traffic while protecting the environment?

- Inventory, forecast, and analyze conditions.

To be able to consider possible solutions, or alternative plans, a starting point needs to be determined and an inventory (what exists now) must be performed. Next, an estimate is made of future conditions, assuming that no project is implemented. For this study, the question could be stated in terms of how the river will look 50 years in the future and why is this important? To be able to determine the impacts, both beneficial (positive) and adverse (negative), a determination of the impacts of each specific plan is made and then compared to the forecasted river condition. The differences between what is expected to occur without a project and what is expected to happen if a project is implemented are the impacts.

A vital part of the plan formulation process is to identify a frame of reference for the various alternatives that could be implemented during the study's 50-year planning horizon from the years 2000-2050. The study is broken down into three components to establish this frame of reference:

- The baseline (existing) condition, or what the river and its uses are like now (the year 2000).
- The future without-project condition, or what the river and its uses will be like over the 50-year planning period without any navigation improvements.
- The future with-project condition, or what the river and its uses will be like if navigation improvements were to be implemented.

Economic, engineering, environmental, and public involvement inputs go into all of these components. The baseline and future without-project conditions are valuable tools in evaluating if measures are needed

and in developing alternative plans.

- Formulate alternative plans to resolve the identified problems and opportunities.

With the problems identified, alternative plans, which are combinations of measures, are created to reduce or solve the problems.

The first alternative always is the "do nothing" alternative. This is also the future without-project condition. The plans are developed by taking into account completeness (the plan must account for all the costs), effectiveness (how well the plan reduces or eliminates the problem), efficiency (is this the most effective way to address the problem) and acceptability (to State and local entities and the public while in compliance with existing laws and regulations).

WE ARE HERE. We are currently in the early stages of the "formulate alternative plans" process in which we are identifying and detailing various measures to address delays at the locks on the Upper Mississippi River and Illinois Waterway. The small- and large-scale measures to be discussed at the November and December 1995 open houses are the results of this effort to date.

An **iterative** process will be used in developing the alternative plans. The alternative measures will be applied in concept starting with the site with the most severe congestion as identified by the study's economic math model. Once benefits are maximized at this first site, accounting for available engineering cost data, estimated lockage time savings for the measures, and environmental modeling for impact assessment, the next critical congestion point will be identified and measures applied to relieve congestion at that site. This iterative process will move the alternative plan development through the system to a point where further measures are no longer justified. At this point in time, the evaluation of separate packages of only small-scale and large-scale measures are also anticipated for further comparison.

- Evaluate the economic, environmental, and other effects, both beneficial and adverse.

As mentioned above, the effects (how does the plan, a combination of one or more measures)

compare to what is forecast to occur with the "do nothing" alternative? Is this plan making things better or worse? Note that numerous effects (environmental, economic, and other) are considered.

The evaluation of effects is a comparison of the future without-project condition to the future with-project condition. The future with-project condition includes work group efforts such as:

Economics: Calculates benefits and annualizes costs for alternative plans, estimates with-project traffic capacities, and uses various models to assist in identifying economically feasible alternatives.

Engineering: Establishes cost estimates for alternative measures and time saving estimates for the lockage process as a result of the proposed alternative measures.

Environmental: Identifies environmental variables through literature searches, math modeling; fish, plant, mussel, recreation, and sedimentation studies; professional judgment; and traffic projections. This information is used to project the future river condition as it relates to natural and cultural resources so an informed, reasoned choice between alternatives can be made. The environmental assessment will involve a qualitative and quantitative impact assessment process for both the system and site-specific navigation improvements, as well as perform a mitigation needs determination, and provide documentation for preparing a National Environmental Policy Act (NEPA) document.

- Compare alternative plans and their effects.

With the effects identified, the plans can be compared to each other.

The alternative plan with the greatest net economic benefits consistent with protecting the Nation's environment is termed the National Economic Development, or NED, Plan.

- Select a recommended plan based upon the comparison of plans.

In turn, the best plan is selected as the recommended plan by considering all the plans, their

effects, and public comments. The NED Plan will be recommended for Federal action unless an exception is granted by the Assistant Secretary of the Army (Civil Works) in consideration of overriding Federal, State, or local concerns.

The recommended plan is currently scheduled to be identified during the summer of 1998. ○

SMALL SCALE MEASURES

Readers were introduced to small-scale measures being considered to reduce lock congestion in the June 1995 newsletter. The Interim Report for the General Assessment of Small-Scale Measures has recently been completed, providing more detailed information on the screening process which examined 92 small-scale measures. This process reduced the number of small-scale measures to the 16 now under consideration. These measures fit into seven major categories and are described below:

1. SCHEDULING PROGRAM

Overall time savings on the system would be accomplished using a PC based scheduling program derived from mathematical modeling of various types and configurations of queues.

2. TOWBOAT POWER

A. Helper boats: Helper boats guide large downbound tows into the upstream ends of the locks during high water flow conditions.

B. Switchboats: These boats are more powerful than helper boats and can remove an unpowered cut from a chamber and move it to a remote mooring facility allowing other tows to use the lock. A cut is a group of barges cabled together.

C. Self help: The towing industry would be required to provide its own form of assistance for moving cuts out of a lock without the assistance of lock personnel or equipment

3. TOW HAULAGE EQUIPMENT

A. Powered keel: A keel is a device shaped like

steer horns used to tie off boats. A powered kevel rides on a rail and provides power to extract unpowered cuts, while holding the tows close to the guidewall.

B. Endless cable system: This system extracts unpowered cuts from the chamber and eliminates the need to haul cable off the drum as in currently used systems.

C. Extended guidewall: Extended guidewalls of 1,200 feet allow the powered cut to reconnect with the unpowered cut completely outside the lock chamber. This measure may work best when combined with other small scale measures such as powered kevels.

4. MOORING FACILITIES ADJACENT TO LOCK APPROACH

This measure would use mooring buoys and special structures to tie off tows and cuts during lockage. There could be a time savings by having vessels staged closer to the lock.

5. CREW ELEMENTS

A. Universal couplers/hand winches: The development of a simple, quick-operating, and universally adaptable coupler for joining barges could save considerable time in breaking and remaking tows.

B. Standard training for crews: New crews would be taught the same procedures and sequences for lockage to reduce time.

6. TOLLS AND REPORTS

A. Congestion tolls: Tolls could be collected from tows using the locks during congestion periods with the intent to shift the distribution of towboat traffic.

B. Excess lockage time charges: An average lockage time would be calculated, and users who take longer than the average time at a particular lock would be assessed a fee.

C. Lockage time charges: This measure would charge all vessels based on the length of time the lock is in use.

D. Publish lockage times: This measure seeks to

point out those towboats and towboat companies whose crews have excessive lockage times.

7. RECREATION VESSELS

A. Scheduling of recreational vessel usage: In this measure, recreational vessels would be locked through only at certain times of the day to minimize locking conflicts with commercial traffic.

B. Recreational craft landing above and below the lock: This measure calls for adding a boat ramp facility at both ends of a pool in order to reduce congestion through minimizing the number of recreational lockages. ○

INTERIM REPORT AVAILABLE

LARGE SCALE MEASURES

“General Assessment of Small Scale Measures”

Copies of the Small Scale Measures interim report may be obtained by sending a check for \$13.00 each, payable to: “FAO, USAED, Rock Island,” to the following address:

U.S. Army Corps of Engineers
ATTN: Planning Division (Simmons)
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004 ○

Large scale measures to reduce navigation congestion on the Upper Mississippi River - Illinois Waterway navigation system are focused on evaluating 600- or 1,200-foot locks to replace or add to the existing 600-foot locks on the two rivers. The Upper Mississippi River - Illinois Waterway System Navigation Study is not considering construction of new dams to replace existing structures or a deeper navigation channel.

It should be emphasized that the lock designs and locations are being explored for cost estimate and comparison purposes only. The Upper Mississippi River - Illinois Waterway System Navigation Study

must have accurate cost data on all methods before any investment decisions can be made.

The large scale measures analysis is divided into two primary tasks. The first task is to determine the engineering feasibility of additional lock locations at the existing structures and the second task is concerned with lock construction techniques. These efforts provide information for the plan formulation process.

The first task, determining feasible locations for new locks, involved looking at 14 locks on the Upper Mississippi River from Locks and Dams 11 through 25 (there is no Lock and Dam 23) and 2 locks, Peoria and LaGrange Locks, on the Illinois Waterway. These locks have the greatest potential need for improvement during the 50-year planning horizon on the Upper Mississippi River - Illinois Waterway navigation system based on the findings of the Reconnaissance Studies. At each site, six lock locations were examined. They included:

1. Landward of the existing lock
2. Extension of the existing lock
3. At the existing auxiliary gate/lock
4. Along the gated section of the dam
5. Along the spillway/overflow sections of the dam
6. On the opposite shore from where the existing lock is located

A diagram of the six lock locations is shown on pages 8 and 9.

Multi-disciplinary study teams in the Rock Island and St. Louis Districts of the Corps of Engineers representing construction, environmental, geotechnical, hydraulics, operations, real estate, and civil/structural design were involved in the screening process. Fifty of the 96 locations were eliminated in Phase 1 of the Initial Screening Interim Report. (The report will be available when completed. Watch for an announcement in a future newsletter.)

Location 1 was eliminated at all lock sites except at Locks and Dams 14, 17, 20, 25, Peoria, and LaGrange.

Locations 2, 3, and 4 are the most favorable because of minimal environmental and navigation impact. Locations 5 and 6 were eliminated at the sites because of foreseen environmental impacts, costs to relocate the navigation channel, and impacts to the existing lock approaches. The following locations are being evaluated in greater detail in Phase II of the site evaluation process.

LOCK SITE LOCATIONS BEING EVALUATED

LOCK	LOCATION	LOCK	LOCATION
11	2,3 and 4	19	3 only
12	2,3 and 4	20	1,2,3, and 4
13	2,3 and 4	21	2,3 and 4
14	1,2 and 4	22	2,3 and 4
15	2 and 3	24	2,3 and 4
16	2,3 and 4	25	1,2,3 and 4
17	1,2,3 and 4	Peoria	1 and 2
18	2,3 and 4	LaGrange	1 and 2

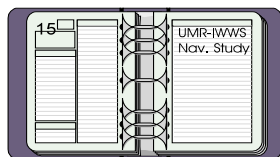
At the same time the work on potential locations for new locks was proceeding, engineering teams were examining three concepts of lock construction. These included:

○ Type A - A "Type A" conceptual lock design uses current design standards and traditional construction methods. It would be constructed within a dewatered cofferdam as were all the existing locks and dams on the Mississippi River and Illinois Waterway. This type of lock would typically have concrete gravity walls, a side port filling system, a downstream miter gate, and either an upstream miter gate or a lift gate. A Type A lock would be expected to have the highest performance levels but also the highest cost. It also has the lowest construction risks.

○ Type B - A "Type B" conceptual lock design would be a lower cost lock than Type A, using construction techniques proven in marine construction but never used in lock construction on inland rivers. Conceptually, this type of construction would employ float-in,

(continued on page 12)

UPCOMING MEETINGS



Navigation Environmental Coordination Committee

- November 14, 1995 - 8:00 a.m. to 4:00 p.m.

Holiday Inn, Moline, IL

Economics Coordination Committee

- November 28, 1995 - noon to 3:00 p.m.

Mpls. Marriott Airport Hotel, Bloomington, MN

Governors' Liaison Committee

- November 28, 1995 - 3:30 p.m. to 6:30 p.m.

Mpls. Marriott Airport Hotel, Bloomington, MN

○ To get updated meeting information, call the toll-free telephone number, 800-USA(872)-8822. Meeting announcements will be in the Public Involvement menu.



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precast-concrete lock and guidewall sections, expanded use of sheet pile cells, and filling and emptying systems of different design and location. A Type B lock would be expected to have a reduction in performance and a possible reduction in durability compared to Type A locks. It also presents moderate risks during construction.

○ Type C - A "Type C" lock design is the lowest first-cost design that still is safe with predictable performance. This type of lock would be constructed of sheetpile cells and would be expected to have a shorter service life (requiring replacement within a 50-year planning horizon) and lower reliability. A Type C lock would present a low to moderate risk to construct.

All three types of designs are being evaluated for construction on either rock foundations or pile foundations. ○

FUTURE NEWSLETTERS

- Read about the results from the open houses
- See the list of available interim Navigation Study products.

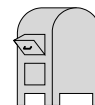
QUESTIONS?

○ for general study information, call Dave Tipple, study manager, at 309-794-5399 or write to the address below, ATTN: CENCR-PD-W.

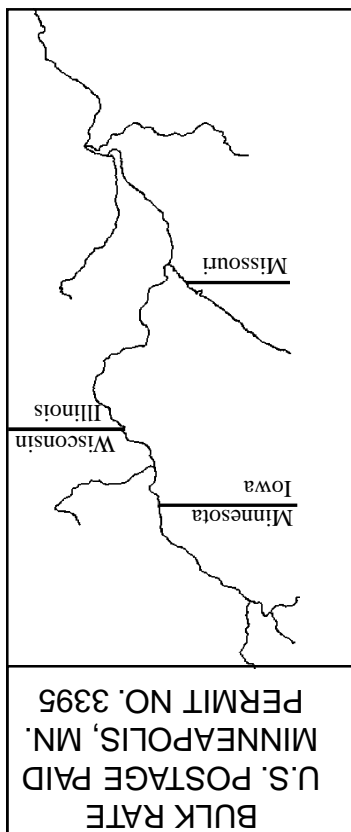
○ or for information on Public Involvement meetings, call the toll-free telephone number, 800-USA(872)-8822. Meeting announcements will be in the Public Involvement menu. Or call Kevin Bluhm, public involvement coordinator, at 612-290-5247, or write to the address below, ATTN: CENCR-PD-C/Bluhm.

○ if you want to be added to the mailing list for future newsletters, study updates, and meeting announcements, write to the address below, ATTN:CENCR-PD-C or call the toll-free telephone number and leave your information in the public involvement menu.

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